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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,051	11/13/2001	Alan C. Thomas	28082.111	2800

7590 03/31/2003
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EXAMINER

GILMAN, ALEXANDER

ART UNIT PAPER NUMBER

2833

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,051

Applicant(s)

THOMAS, ALAN C.

Examiner

Alexander Gilman

Art Unit

2833

-- Th MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budd in view of Chandra et al.

With regard to claims 1, 3-5 Budd (US 5,935,638) disclose a method for treating phosphor comprising steps of

providing a fluidized bed of phosphor;

vaporizing water in a carrier gas (2) to form a first gas (8);

vaporizing a second precursor in a carrier gas (2) to form a second gas (10);

passing the first gas and the second gas through the fluidized bed to form coating on the phosphor.

Suggesting a variety of materials for the second precursor (including silicon tetrachloride), Budd does not disclose an organic component for the second precursor.

Chandra et al (US 5,935,638) disclose organotrichlorosilane (col. 1, lines 11-16; col. 7, lines 47-50) as a precursor for CVD process in multi-layer coating (col. 7, lines 7-8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide organotrichlorosilane as the second precursor, as taught by Chandra et al, to improve moisture resistance of the phosphor.

With regard to claim 2, Budd when modified by Chandra et al disclose (Chandra et al, col. 7, lines 35-39) step of passing the first gas and the second gas through the fluidized bed to form coating on the phosphor is continued about 30 minutes.

Art Unit: 2833

2. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klinedinst et al in view of Chandra et al.

Klinedinst et al (US 5,220,243) disclose a lamp comprising:

- a transparent electrode (75);
- a phosphor layer (76);
- dielectric layer (77);
- a rear electrode (78).

Klinedinst et al disclose just one moisture resistant coating which includes metal oxide coating and organic component and formed in a fluidized bed. However Klinedinst et al do not disclose two coatings with a precursor in form of organotrichlorosilane.

Chandra et al (US 5,935,638) disclose organotrichlorosilane (col. 1, lines 11-16; col. 7, lines 47-50) as a precursor for CVD process in multiplayer coating (col. 7, lines 7-8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide organotrichlorosilane as the second precursor for the second layer in double coating, as taught by Chandra et al, to improve moisture resistance of the phosphor.

3. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klinedinst et al in view of Okuhira et al.

Klinedinst et al disclose (Fig. 1) a method for treating phosphor comprising steps of

- providing a fluidized bed of phosphor;
- vaporizing water in a carrier gas(nitrogen) to form a first gas (22) ;
- vaporizing a second precursor in a carrier gas (nitrogen) to form a second gas (12);
- passing the first gas and the second gas through the fluidized bed to form coating on the phosphor.

Klinedinst et al does not disclose organotrichlorosilane for the second precursor.

Okuhira et al (US 6,271,333) disclose (col. 1, lines 7-14; col. 3, lines 27-42;) as a precursor for CVD process

Art Unit: 2833

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide organotrichlorosilane as the second precursor, as taught by Okuhira et al, to improve moisture resistance of the phosphor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Gilman whose telephone number is (703) 305-0847. The examiner can normally be reached on Monday-Friday, 10:30 a.m. - 8:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (703) 308-2319. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

Alexander Gilman

A handwritten signature in cursive script that reads "Alex Gilman".

March 22, 2003